Module 28
Reeving Load Blocks

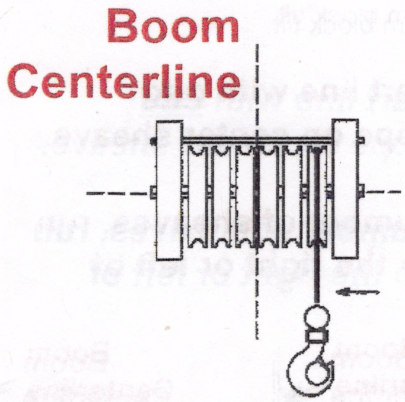
Learning Objectives

By the end of this section, you will:

1. Know the consequences of eccentric reeving.
2. Know which sheaves to use when reeving blocks.

Full load chart ratings apply only when boom tip is properly reeved.

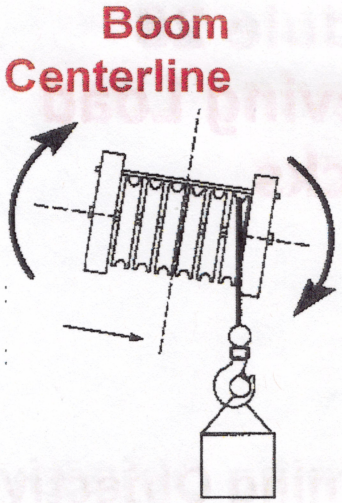
When main hoist line is reeved to one side of the boom tip, torsional loading on boom occurs.



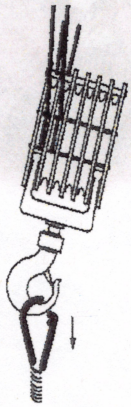
What happens if the hoist line is not centered over the boom tip?

» When main hoist line is reeved to one side of the boom tip, torsional loading on boom occurs.

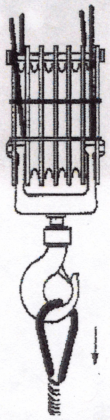
The boom will twist when a load is added!



Eccentric reeving causes adverse wear and damage to line.

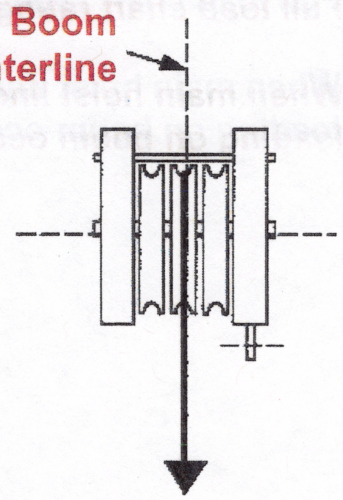


Assymetrically reeved block



Symetrically reeved block

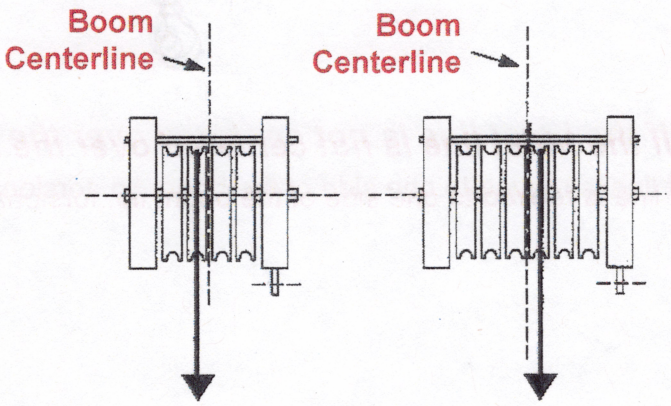
Eccentric reeving:



- Causes lines to run untrue.
- Affects a crane's capacity.
- Accentuates boom torque.
- Causes rapid sheave wear from block tilt.

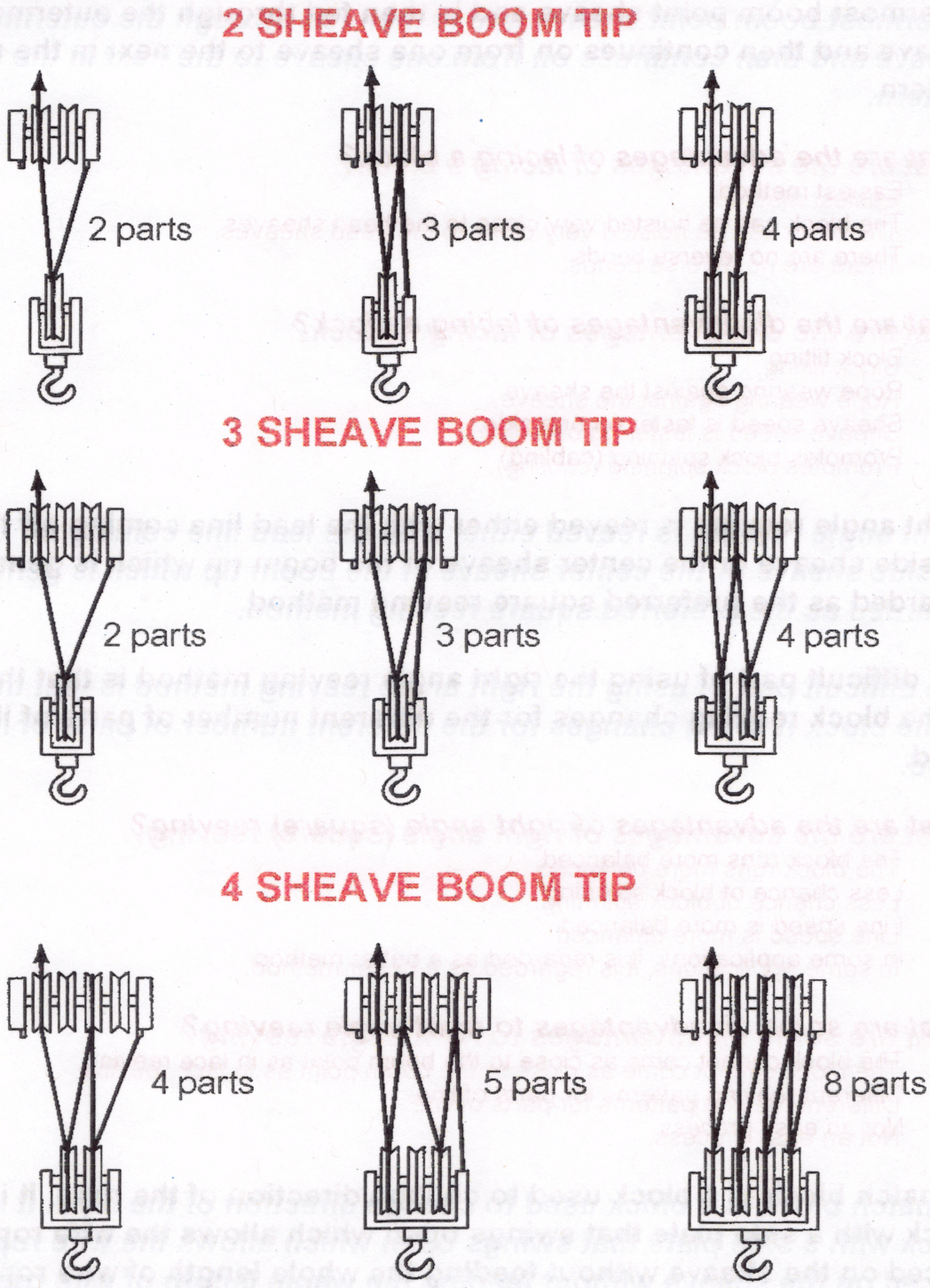
On blocks with a single part line with odd number of sheaves, run rope on center sheave.

On blocks with an even number of sheaves, run rope on the first sheave to the right or left of boom center line.



Hoist sheaves using multi-part blocks must be reeved to distribute load uniformly across the block.

Boom torque is eliminated or minimized.



There are mainly two types of block reeving:

- Lace reeving.
- Square reeving (aka, right angle, 90 degrees).

Lace reeving a block is when the wire rope is passed through the outermost boom point sheave and is then fed through the outermost block sheave and then continues on from one sheave to the next in the same pattern.

What are the advantages of lacing a block?

» Easiest method.
» The block can be hoisted very close to the head sheaves.
» There are no reverse bends.

What are the disadvantages of lacing a block?

» Block tilting.
» Rope wearing against the sheave.
» Sheave speed is faster on one side.
» Promotes block spinning (cabling).

Right angle reeving is reeved either with the lead line coming off the outside sheave or the center sheave of the boom tip which is generally regarded as the preferred square reeving method.

The difficult part of using the right angle reeving method is that the pattern of the block reeving changes for the different number of parts of line being used.

What are the advantages of right angle (square) reeving?

» The block runs more balanced.
» Less chance of block spinning.
» Line speed is more balanced.
» In some applications, it is regarded as a better method.

What are some disadvantages to right angle reeving?

» The block cannot come as close to the boom point as in lace reeving.
» Different reeving patterns for parts of line.
» Not an easy process.

A snatch block is a block used to change direction of the rope. It is a pulley block with a side plate that swings open which allows the wire rope to be placed on the sheave without feeding the whole length of wire rope through the block. The snatch block is used mostly for angled pulls or increasing the mechanical advantage of a machine.